

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) An isolated or recombinant protein having phytase activity, ~~said protein comprising~~ consisting of the amino acid residues 23-433 sequence of SEQ ID NO: 7.

2. (Currently amended) The isolated or recombinant protein as set forth in claim 1, wherein the protein is expressed by a polynucleotide comprising the nucleotide sequence of SEQ ID NO.:6. has the following characteristics:

- (a) ~~molecular weight: about 47 kDa on SDS PAGE,~~
- (b) ~~optimal pH: pH 3.5- pH 4.5,~~
- (c) ~~Optimal temperature: 45 °C-55 °C,~~
- (d) ~~substrate specificity: phytate, p-nitrophenyl phosphate, tetrasodium pyrophosphate, ATP or ADP,~~
- (e) ~~michaelis constant of 0.3-0.5 mM utilizing phytate as a substrate,~~
- (f) ~~high resistance to protease such as pepsin, trypsin, papain, elastase or pancreatin, and~~
- (g) ~~specific activity to phytate: at least 1,500 units/mg.~~

3. (Canceled)

4. (Canceled)

5. (Currently amended) The isolated or recombinant protein as set forth in claim 1, wherein the specific activity of the protein to phytate is at least 3,000 units/mg.

6. (Previously presented) An isolated gene encoding the protein of claim 1.

7. (Currently amended) The gene as set forth in claim 6, wherein the gene has the polynucleotide sequence of ~~represented by~~ SEQ ID NO:6.

8. (canceled)

9. (Previously presented) A feed additive containing the protein of claim 1 as an effective ingredient.

10-12. (canceled)

13. (Currently amended) The isolated or recombinant protein as set forth in claim 2, wherein the specific activity of the protein to phytate is at least 3,000 units/mg.

14. (Canceled)

15. (Previously presented) An isolated gene encoding the protein of claim 2.

16-19. (canceled)

20. (Previously presented) A feed additive containing the protein of claim 2 as an effective ingredient.

21. (New) An isolated gene encoding a protein having phytase activity, said protein comprising the amino acid residues 23-433 of SEQ ID NO.:7.

22. (New) The isolated gene of claim 21, wherein the protein has the amino acid sequence of SEQ ID NO.:7.

23. (New) The isolated gene of claim 21, wherein the gene comprises the nucleotide sequence of SEQ ID NO.:6.